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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,310	08/21/2001	G. David Jang	S63.2-10078	8078
490 7590 02/04/2008 VIDAS, ARRETT & STEINKRAUS, P.A. SUITE 400, 6640 SHADY OAK ROAD EDEN PRAIRIE, MN 55344			EXAMINER PREBILIC, PAUL B	
			ART UNIT 3774	PAPER NUMBER
			MAIL DATE 02/04/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

09/934,310

Applicant(s)

JANG, G. DAVID

Examiner

Paul B. Prebilic

Art Unit

3774

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 50-55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 50-55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Specification***

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The claim language referring to “annular elements”, “openings”, a “pattern of openings”, flexibility differences between the ends, and the majority of the length of the stent being tapered does not have proper antecedent basis from the specification.

***Claim Rejections Based Upon Prior Art***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 50-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lau et al (US 5,421,955) in view of Alt et al (US 5,843,117) or Limon et al (US 6,027,526). Lau discloses tapering a stent that has the same number of struts in each segment and altering the radial stiffness of the stent by varying the amplitude of the undulating annular segments; see the figures and column 4, lines 48-53 and column 5, line 61 to column 6, line 2. The “amplitude of undulations” inherently refers to the strut lengths where the undulation amplitude or strut length can be varied to alter the properties of the stent. Since the taper is to match the blood vessel and since blood vessels taper, along their lengths, from a larger diameter to a smaller diameter, the

Examiner asserts that it would have been *prima facie* obvious to taper the Lau stent in this manner and along a majority of the length thereof by varying the undulation amplitude or strut length gradually in order to taper the stent diameter gradually.

With regard to claims 50-53, Lau suggests varying the radial flexibility (i.e. radial stiffness) but not specifically from one end to another. However, Alt teaches that it was known to vary the radial thickness and stiffness with struts of substantially the same circumferential width; see Figure 11 and column 18, lines 62 to column 19, line 17. Likewise, Limon teaches that it was known to do the same but from one end to another; see particularly Figure 18 and column 7, lines 24-38. Therefore, it is the Examiner's position that it would have been obvious to vary the radial flexibility for the same reasons that Limon or Alt does the same.

With regard to claim 52, the Applicant is referred to Figure 6 and column 7, lines 7-30 that discloses the claimed method steps.

Claims 54-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lau et al (US 5,421,955) alone. Lau discloses tapering a stent that has the same number of struts in each segment and altering the radial stiffness of the stent by varying the amplitude of the undulating annular segments; see the figures and column 4, lines 48-53 and column 5, line 61 to column 6, line 2. The "amplitude of undulations" inherently refers to the strut lengths where the undulation amplitude or strut length can be varied to alter the properties of the stent. Since the taper is to match the blood vessel and since blood vessels taper, along their lengths, from a larger diameter to a smaller diameter, the Examiner asserts that it would have been *prima facie* obvious to

taper the Lau stent in this manner and along a majority of the length thereof by varying the undulation amplitude (i.e. strut length) gradually in order to taper the stent diameter gradually.

### ***Response to Arguments***

Applicant's arguments filed August 21, 2007 have been fully considered but they are not persuasive.

On pages 7 and 8 of the response, the Applicant argues that Lau is referring to different stents having different amplitudes not different annular elements on column 5, line 61 et seq. However, the Examiner asserts that Lau is referring to a particular stent because language "the stent" is used and "the stent" is said to have different amplitudes and undulating patterns. Furthermore, even if Lau were to be understood in the manner that Applicant proposes at least Alt or Limon would provide teachings that it was known to vary properties of a stent along the length thereof.

Referring to the rejection of claims 54 and 55, even with the Applicant's proposed interpretation of Lau, claim 54 does not specify how many annular elements have decreasing longitudinal lengths so it can be two in number. Therefore, the end annular element of Lau would have a shorter longitudinal length as compared to the one adjacent to it, because it would not have interconnection elements on the end thereof; see Figure 11. For this reason, the end annular element would be at least a half an interconnector length shorter than the annular element immediately adjacent it. Furthermore, another reference of record, specifically Brown et al (US 6,348,065), clearly shows that the concept of varying the annular element strut length along a stent

longitudinal length was known to the art at the time the present invention was made; see Figure 4 of Brown et al.

For these reasons, the traversal was not considered persuasive and the rejections have been maintained.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Applicant should specifically point out the support for any amendments made to the disclosure, including the claims (MPEP 714.02 and 2163.06). Due to the procedure outlined in MPEP 2163.06 for interpreting claims, it is noted that other art may be applicable under 35 USC 102 or 35 USC 103(a) once the aforementioned issue(s) is/are addressed.

Applicant is respectfully requested to provide a list of all copending applications that set forth similar subject matter to the present claims. A copy of such copending claims is respectfully requested in response to this Office action if the application is not stored in image format (i.e. the IFW system) or published.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Paul B. Prebilic whose telephone number is (571) 272-4758. He can normally be reached on 6:30-5:00 M-Th.

Art Unit: 3774

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Corrine McDermott can be reached on 571-272-4754. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Paul Prebilio/  
Paul Prebilio  
Primary Examiner  
Art Unit 3774